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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/990,627	11/16/2001	Mark A. Lemkin	AIMI-01924US0	3417

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EXAMINER

TERESINSKI, JOHN

ART UNIT PAPER NUMBER

2858

DATE MAILED: 03/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

AK

<b>Office Action Summary</b>	<b>Application No.</b> 09/990,627	<b>Applicant(s)</b> LEMKIN ET AL.	
	<b>Examiner</b> John Teresinski	<b>Art Unit</b> 2858	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 06 December 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-49 is/are pending in the application.
- 4a) Of the above claim(s) 23-35 and 41-44 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5, 7-22, 36-40 and 45-49 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION*****Drawings***

The drawings are objected to because elements 11, 21 and 30 do not have descriptive labels or symbols identifying the elements. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-5, 14, 19, 20-22, 36-38, 45 and 46 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 5,641,911 to Ryhanen.

Regarding claim 1, Ryhanen discloses a sense capacitor (Fig. 1b elements 1,3), a sense pulse generator having an output coupled to the sense capacitor, the output providing a first polarity sense pulse to the sense capacitor during a first sampling period and a second polarity sense pulse to the sense capacitor during a second sampling period (column 4 lines 25-28, column 5 lines 5-10), a detector coupled to the sense capacitor (column 5 lines 15-20) and a storage device coupled to the detector (column 5 lines 44-47).

Regarding claims 2 and 3, Ryhanen discloses a sample and hold circuit (column 5 lines 44-47) and capacitor (Cref2).

Regarding claim 4, Ryhanen discloses the storage device is a capacitor (column 5 lines 35-45).

Regarding claim 5, Ryhanen discloses a filter (10) coupled to the storage device.

Regarding claims 14, Ryhanen discloses a second sense capacitor coupled to the detector and the sense pulse generator (Fig. 1b elements 2,3).

Regarding claims 19 and 20, Ryhanen discloses first sense pulse as a voltage/charge pulse, and said second sense pulse comprises a voltage/charge pulse wave (column 5 lines 5-10).

Regarding claims 21 and 22, Ryhanen discloses the detector as a charge/voltage detector (column 5 lines 20-25).

Regarding claim 36, Ryhanen discloses a sense capacitor coupled to a microstructure (column 3 lines 9-10).

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Regarding claims 37 and 38, Ryhanen discloses the charge detector comprises a buffer amplifier/charge integrator (Fig. 1b element 55).

Regarding claim 45, Ryhanen discloses providing a plurality of sense pulses having a first polarity to a sense capacitor during a first phase to obtain a first output of the sense transducer and providing a plurality of sense pulses having a second polarity to a sense capacitor during a second phase of the sine wave to obtain a second output of the sense transducer (column 4 lines 25-28, column 5 lines 5-10).

Regarding claim 46, Ryhanen discloses the storing output of the sense capacitor (column 5 lines 44-47).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ryhanen.

Regarding claims 15 and 16, Ryhanen disclose detector with an output being responsive to the orientation of said microstructure (column 3 lines 9-10). Ryhanen discloses the claimed invention except for a third and fourth capacitor coupled to the detector and the sense pulse generator. It would have been obvious to one having ordinary skill in the art at the time the invention was made to include a third and fourth capacitor coupled to the detector and the sense

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pulse generator since it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 8.

Claims 7,8,10-13, 17, 18, 39, 40 and 47-49 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ryhanen in view of U.S. Patent No. 3,918,310 to Evans et al..

Regarding claim 7, 12, 13, 39 and 47-49, Ryhanen discloses a modulated feed back control signal (column 4 lines 15-17). Ryhanen does not teach a demodulation circuit. Evans et al. disclose a demodulation circuit coupled to the output of the detection circuit (Fig. 6 element 50). It would have been obvious to one of ordinary skill in the art at the time the invention was made to include a demodulation circuit as taught by Evans et al. into Ryhanen for the purpose of providing an error signal (column 2 lines 25-31).

Regarding claims 8, 10 and 11, Ryhanen disclose a low pass filter (10) and a switch (57).

Regarding claims 17, 18 and 40, Ryhanen discloses the device as described above but does not teach an analog to digital converter coupled to the storage device. Evans et al. disclose a capacitive sensing system including an analog to digital converter coupled to a storage device/demodulator (column 7 lines 1-15). It would have been obvious to one of ordinary skill in the art at the time the invention was made to include an analog to digital converter coupled to a storage device/demodulator as taught by Evans et al. into Ryhanen for the purpose of facilitating processing of capacitive output.

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ryhanen, Evans et al. and further as applied to claims 1, 7 and 8 above, and further in view of U.S. Patent No.

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5,345,824 to Sherman et al.

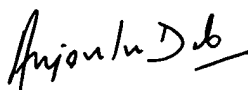
Regarding claim 9, Ryhanen as modified does not disclose a filter that includes a high pass characteristic. Sherman et al. disclose an accelerometer including a filter that includes a high pass characteristic (column 1 lines 35-48). It would have been obvious to one of ordinary skill in the art at the time the invention was made to include a filter with a high pass characteristic as taught by Sherman et al. into Ryhanen as modified for the purpose of providing a full scale range of measurement (column 1 lines 35-48).

### *Conclusion*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John Teresinski whose telephone number is (571) 272-2235. The examiner can normally be reached on M-F 8:30 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eddie Lefkowitz can be reached on (571) 272-2180. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
**ANJAN DEB**  
**PRIMARY EXAMINER**

JT  
3/1/05